

Claims

[c1] What is claimed is:

1. A liquid crystal display panel with a test cell structure comprising:

a substrate;

a plurality of first driving IC mounting areas formed on the surface of the substrate for mounting a first driving IC separately;

a plurality of first conductive wires in parallel;

a plurality of second conductive wires in parallel with and interlaced with the first conductive wires on the substrate for receiving the signals from the first driving ICs;

a first shorting bar connected to the first conductive wires and passing through all of the first driving IC mounting areas; and

a second shorting bar connected to the second conductive wires and passing through all of the first driving IC mounting areas.

[c2] 2. The liquid crystal display panel of claim 1 wherein the surface of the substrate contains at least one second driving mounting area that is used for mounting one second driving IC, the test structure further comprising:

a plurality of third conductive wires perpendicular to the first and second conductive wires located on the substrate for receiving the signals from the second driving IC; and

a third shorting bar connected to the third conductive wires and located at the second driving IC mounting area.

[c3] 3. The liquid crystal display panel of claim 2 wherein the surface of the substrate comprises a plurality of testing pads connected to the one end of the first, the second, and the third shorting bars, which is for inputting the detected signal to the first, the second, and the third shorting bars to perform a liquid cell test.

[c4] 4. The liquid crystal display panel of claim 3 wherein the first and the second conductive wires are data lines, the third conductive wires are scanning lines, and when the liquid crystal cell test is completed, the first and the second shorting bars are used to connect to the first driving IC in series.

[c5] 5. The liquid crystal display panel of claim 4 further comprising:
a plurality of fourth conductive wires parallel to the third wires used as a scanning line and for receiving the signal from the second driving IC; and

a fourth shorting bar connected to the fourth conductive wires installed at the second driving IC mounting area.

[c6] 6. The liquid crystal display panel of claim 5 wherein the substrate comprises a plurality of the second driving IC mounting areas, and the third and the fourth shorting bars pass through the second driving IC mounting areas, and when the liquid crystal cell test is completed, the third and the fourth shorting bars are used to connect to the second driving IC in series.

[c7] 7. The liquid crystal display panel of claim 6 further comprising:
a plurality of fifth conductive wires parallel to the first and the second conductive wires used as data lines and for receiving the signal from the first driving IC, each first conductive wire transmitting a red image signal, each second conductive wire transmitting a green image signal, and each fifth conductive wire transmitting a blue image signal; and
a fifth shorting bar connected to the fifth conductive wire and located at the first driving mounting area, and when the liquid cell test is completed, the fifth shorting bar is used to connect the first driving IC in series.

[c8] 8. The liquid crystal display panel of claim 3 wherein each first and second conductive wire are scanning lines

and every third line is a data line, and when the cell test is completed, the first and the second shorting bars are used to connect the first driving ICs in series.

[c9] 9. The liquid crystal display panel of claim 7 wherein the surface of the substrate includes a plurality of second driving IC mounting areas, and all of the third shorting bars pass through the second driving IC mounting areas, and when the liquid crystal cell test is completed, the third shorting bar is used to connect the second driving ICs in series.

[c10] 10. The liquid crystal display panel of claim 1 wherein the liquid crystal display includes another plurality of first bounding pads located on the first and the second shorting bars between two neighboring first driving IC mounting areas for electrically connecting a first flexible printed circuit to the first and the second shorting bars between the two neighboring first driving IC mounting areas, wherein the first flexible driving IC is for inputting a signal to the first driving IC.

[c11] 11. The liquid crystal display panel of claim 2 wherein the surface of the liquid crystal display includes a plurality of the second driving IC mounting areas, and the liquid crystal display comprises another plurality of second bounding pads located on the third shorting bars be-

tween two neighboring second driving IC mounting areas for electrically connecting a second flexible printed circuit to the first, the second, and the third shorting bars between the two second driving IC mounting areas, wherein the second flexible printed circuit is for inputting a signal to the first driving IC.

- [c12] 12. A method of producing liquid crystal display with a cell test structure, the liquid crystal display comprising: providing a first substrate and a second substrate, the first substrate comprising:
a plurality of first conductive wires disposed on the first substrate in parallel; and
a first shorting bar connected to each first conductive wire;
the method comprising:
using the first shorting bar to perform a liquid crystal cell test;
performing a cutting process to cut off the connection between the first shorting bar and each first connective wire; and
locating a plurality of first driving ICs on the first substrate, and using the first shorting bar to connect the first driving ICs in series, wherein each first driving IC is used to output a signal to the first conductive wires.

- [c13] 13. The method of claim 12 wherein each first conductive wire is a first data line transmitting red image signals.
- [c14] 14. The method of claim 13 wherein the first substrate includes a plurality of second data lines transmitting green image signals and a plurality of third data lines transmitting blue image signals, a second shorting bar connected to each second data line and a third shorting bar connected to each third data line.
- [c15] 15. The method of claim 14 wherein the first substrate further comprising:
a plurality of first scanning lines;
a plurality of second scanning lines in parallel and interlaced with the first scanning lines;
a fourth shorting bar connected to each second scanning line; and
a fifth shorting bar connected to each second scanning line.
- [c16] 16. The method of claim 15 wherein the liquid crystal cell test comprises:
inputting a test signal to the fourth shorting bar and the fifth shorting bar simultaneously;
inputting a test signal to one of the first shorting bar,

the second shorting bar, and the third shorting bar; and checking the image on the liquid crystal display.

[c17] 17. The method of claim 15 wherein the liquid crystal cell test comprises:

inputting a third test signal, a fourth test signal, and a fifth test signal to the first shorting bar, the second shorting bar, and the third shorting bar; and checking the image on the liquid crystal display.

[c18] 18. The method of claim 17 wherein the liquid crystal cell test further comprises providing a sixth test signal input to the fourth shorting bar.

[c19] 19. The method of claim 18 wherein the liquid crystal cell test further comprises providing the sixth test signal input to the fifth shorting bar.

[c20] 20. The method of claim 15 wherein the cutting process comprises:

disconnecting the connection between the second shorting bar and each second data line;

disconnecting the connection between the third shorting bar and each third data line;

disconnecting the connection between the first shorting bar and each first scan line; and

disconnecting the connection between the fifth shorting

bar and each second scan line.